

XVI.—*The Birds of Jhang District, S. W. Punjab.* Part I.
Passerine Birds. By HUGH WHISTLER, F.Z.S., M.B.O.U.,
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(With a Map—Text-figure 9.)

INTRODUCTION.

Physical Characteristics of the District of Jhang.

THE District of Jhang takes its name from the ancient town of Jhang which, together with the more modern town of Maghiana, forms the Headquarters of the administrative area. The district lies between north latitude $30^{\circ} 50'$ and 32° , and east longitude $71^{\circ} 50'$ and 73° along the banks of the Chenab and Jhelum rivers, about the confluence of which it may be said to pivot. In shape it forms a long, narrow slab along the banks of the Chenab, with a length of 120 miles and an extreme breadth, at right angles to that river, of 40 miles. The present area is something over 3000 square miles. The adjoining districts are: on the north, Shahpur and Gujranwala; on the east, Lyallpur; on the south, Multan and Muzaffar-Garh; and on the west, Mianwali and Shahpur. The district for administrative purposes is divided into the three tehsils of Chiniot, Jhang, and Shorkot, each with their headquarters at the respective towns of those names.

The outstanding characteristic of the district is the presence of the two large rivers. The Jhelum has a short course of only 40 miles in the north-western corner of the district until it is absorbed by the Chenab, which after a separate passage of some 80 miles from the north-eastern boundary of the district carries their combined waters another 40 miles to the Multan and Muzaffar-Garh borders. The course of both rivers is very tortuous and is constantly changing. Each river is continually working out a series of loops, which gradually deviate farther and farther from the general direction of the stream until at last it breaks back into a more direct course, only to begin another loop. A general trend towards the west is, however, observable.

During the winter months both rivers, robbed of their waters by the canal systems, dwindle to slow, narrow, shallow streams tracing a winding course among the sands and islands of the river-bed. With the melting of the Himalayan snows they rapidly swell until, from about April to October, they present the appearance of a vast, swift flood, a mile or so in width, with only the larger islands uncovered. Rises in the level are very sudden though often short-lived, and cause floods which frequently extend three or four miles into the surrounding country. This riverain area, including the longer islands, is very consistent in character throughout the length of the district. The sandy soil, enriched in varying degrees by successive layers of silt, is intersected by numerous channels, usually dry and sandy, but filling with any rise in the river. Extensive belts of tamarisk scrub, often so thick and strong that a horse can with difficulty pass through, are diversified by small pieces of cultivation in which crops of wheat, grain or vetches are grown along the edge of this area; and often extending into it are high-lying strips and patches of waste ground of a sandy texture covered with a thick growth of *Sarkana* grass.

Along the western edge of the Jhang and Shorkot tehsils lies a high plateau, known as the Thal, more or less completely covered with belts and dunes of blown sand, which alternate with hollows of fairly good soil studded with stunted trees and bushes. The whole effect is most monotonous, and on the only occasion when I visited this tract it appeared to contain but few birds.

The remainder of the district may be described as illustrating the conflict between nature and civilization which ensues when modern engineering has brought canals into a region semi-desert by nature. Large stretches of cultivation, wheat, cotton, and turnip crops, sparsely studded with *Kikar* and *Shisham* trees, are diversified with patches of waste ground covered with wild *Caper* and "Lana" plants.

In places, notably towards *Khiwa* and *Shorkot*, there extend wide plains of this barren and desolate land, awaiting only a further extension of the canal system. In parts,

particularly between the fork of the Jhelum and Chenab rivers, the soil is notably sterile and impregnated with salt-petre; so that for miles the traveller may pass over dead, dusty, whitish soil which produces only coarse, worthless grass, a semi-desert flora, and thorny bushes stunted by the grazing of innumerable goats and camels.

On both sides of the Chenab at Chiniot occurs a curious outcrop of small rocky hills similar to the Kirana Hills of Shahpur, and Sangla Hill in Gujranwala District. From them one may look across to the Salt Range some 40 miles away across the Jhelum River; yet geologically these hills have no connection with the Salt Range, but appear to be the last outposts of the Aravali ranges. These hills are very steep, in ridges with a north-east to south-west strike; they are very bare, covered with broken rocks and stones with sparse grass and a few stunted bushes. They rise from a flat plain, after the manner of drawing of hills by childish hands.

Two localities deserve special mention from their interest both to the sportsman and the ornithologist; both owe their present characteristics to the activity of the Canal Department. In the Barana direction the Nurpur Canal escape, originally a channel constructed to return excess water in the canals to the Chenab River, has caused the formation of a series of huge reed-beds and thickets of "Pampas grass" extending for some five miles, sometimes dry, sometimes a swamp; this in the cold weather is the haunt of numerous wildfowl, and at all seasons forms the home of numerous interesting birds.

About Massan the tail of another branch of the canal is used as an outlet to run off the surplus water, and this has caused the formation of various jheels and reedy channels which formed one of my favourite hunting-grounds; more particularly as the broken nature of the ground and the separate channels and patches of water were most fully adapted to the needs of the falconer in search of duck.

In the whole district there is nothing that may be dignified by the name of a wood, except a small reserve belonging to the Forest Department on one bank of the Jhelum River. This unfortunately I have not been able to visit.

The prominent trees of the district are few in number. The most abundant and most useful is the Kikar (*Acacia arabica*). The next most abundant species is the Shisham (*Dalbergia sissu*), usually associated with cultivation.

The date-palm (*Phoenix dactylifera*) grows luxuriantly on the banks of the Jhelum and below the junction of the Chenab and Jhelum; elsewhere it is rare.

Of the more stunted forms of tree, the most noticeable are the Ber (*Zizyphus jujuba*), the Jand or Jant (*Prosopis spicigera*), the Jal (*Salvadora oleoides*), and the Tamarisk (*Tamarix articulata*).

Amongst the semi-desert flora may be noticed the wild Caper (*Capparis aphylla*), the Uck (*Calotropis gigantea*), and various small plants such as the Camel-thorn and the "Lana" (*Sueda* and *Salsola* spp.).

The Sarkhana grass (*Saccharum munja*) is a great feature of the district, patches of it often extending for miles. As fodder and in the manufacture of articles connected with village life its uses are innumerable.

The climate of Jhang is similar to that of the remainder of the south-western Punjab. In the winter the cool, bright days, the cold nights, and the crisp, fresh mornings are exceedingly pleasant; about March the weather grows perceptibly warmer, till April and May culminate in the intense burning discomfort of June and the period that precedes the rains which break about July. The discomfort of the hot weather does not, however, cease until September, and the cold weather proper only begins towards the end of October. For the most part the nights are fairly cool, and afford some relief after the heat of the day. The rainfall is very light, 10 inches being about the average for the year. It may be noted that the monsoon of 1917 was abnormally heavy, the amount of rain falling being actually the heaviest on record with an excess of + 20% for the whole of the plains of India. The year 1918 was, on the other hand, unusually dry, with a partial failure of the monsoon. During 1919 weather conditions were on the whole normal.

Communications within the district are exceedingly bad.

as there are practically no metalled roads and the railway arrangements are primitive. Almost all my travelling has been on horse- or camel-back.

Such are the physical characteristics of the district of which I took over Police administrative charge on the 19th of October, 1917, remaining there for over two years until relieved on the 17th of March, 1920. For the whole of this period, with the exception of two months' absence on military duties in June and July 1918 and one month's leave in November 1919 and a few short spells of casual leave, I was either at Jhang or toured in the interior.

Camp-life is a great feature of a police officer's duties : he has to visit and inspect the various police stations, and all areas in his charge come to notice either from its own local importance or for some reason connected with the administration. In the course of it he acquires a most detailed acquaintance with the whole of his district. The circumstances of my life at Jhang were therefore ideal for an ornithologist : my observations were not made merely at one isolated spot, but they covered an area of some 3000 square miles, different parts of which were visited at all times of the year. A consultation of my official registers shows that I spent in all 245 days on tour away from headquarters, and travelled over 1700 miles on horse- or camel-back on official duty, to keep no count of the many miles which I walked out shooting or collecting. It may be mentioned that often for a month or more at a time I saw no white man, and was in consequence entirely dependent on my own resources for amusement when the day's work was done : my leisure was therefore devoted to sport or ornithology, and my opportunities for them were immense. About the time that I arrived at Jhang my friend and "fellow Ibis," Dr. Claud B. Ticehurst, arrived in India in the R.A.M.C., and was fortunately stationed at Karachi, which is comparatively handy, as distances go in India, for Jhang. On two occasions in December 1917 and December 1918 he was able to obtain some leave and join me. For both visits I arranged a short tour in those parts of the district most suitable for sport and ornithology. The notes

and specimens obtained by Dr. Ticehurst while he was with me have been incorporated in this account.

In November 1871 Hume passed down the Jhelum and Chenab rivers through Jhang District on the commencement of his famous Sind tour, described in 'Stray Feathers' (vol. i.). The few days thus spent by him on a boat with occasional landings comprise the whole of the ornithological work done in Jhang District before my arrival there, and the probabilities are that many years will again elapse before another naturalist works the locality. Hence I have thought it desirable to give a somewhat detailed account of the birds observed and their status; and to this I am the more inclined from a realization that the natural characteristics of the Punjab are undoubtedly changing very rapidly in response to the effects of the vast irrigation system which is converting what was once almost a desert into one of the granaries of the Empire. This change, with its resulting increase of population and various minor reasons, such as the increase of firearms, render it desirable to leave on record for the naturalist of the future a fairly detailed picture of the ornithology of this part of the world.

Ornithologically, Jhang District is of considerable interest. There is a period from the middle of May to the middle of July when the number of species is at its poorest, both in numbers and in interest. Such birds as there are, being the breeding forms typical of the Indian subregion, mostly common and widely spread. Then about the middle of July the Roller and the Rosy Pastor arrive as the harbingers of the autumn migrations, which bring vast hordes of birds through the district in August and September; the passage birds pass on, but leave in their wake the true winter visitors who have come to spend the whole winter with us; these are numerous, both in species and individuals, and are in the main of Palearctic forms. Desert species are strongly represented. Throughout the winter there is a good deal of movement, dependent doubtless on climatic conditions in other areas, and about January in particular interesting stragglers may be expected. In February the influence of the

spring migration begins to be felt, and through March and April there is a general rush which dies away early in May. Such is the cycle of the ornithological year at Jhang.

Several well-defined lines of movement run through the district. The Jhelum and Chenab rivers are a route for water-birds passing up to Central Asia. A most marked route N.W. to S.E. in autumn and in the opposite direction in spring is shown by the movements of the Sand-Grouse and Cranes. Short-billed Minivets and Great Tits attest the presence of a direct north to south movement from the western Himalaya, while Eversmann's Redstart and the Meadow-Bunting show an equally marked east and west movement. The southern half of the district touches the fringe of certain well-marked migration movements in Sind; as, for example, is shown by the occurrence about Shorkot of *Agrobates g. familiaris*, *Muscicapa striata*, and *Sylvia communis icterops*, which occur commonly in Sind alone of all the plains of India as autumn passage migrants.

The inhabitants of the district pay little or no attention to the wealth of bird-life around them, and are but little interested in sport. The leading men throughout the district possess guns, but they seldom use them for sport; some menial servant is sent out at intervals to procure a few Partridges or Duck for the pot, and the owner of the gun considers it too much trouble to kill game for himself. Falconry is a sport indigenous to the soil, but on my arrival in the district I found that although many of the important landowners had at one time or another possessed Hawks, practically all had given them up. The discovery that their new District Officer was himself a keen falconer, and had arrived with two native falconers and several trained Peregrines and Shahins, gave a temporary impetus to dying customs, and a number of Goshawks were imported into the district; these were prominently paraded whenever I appeared, and a miscellaneous number of Falcons were also kept; but the old-time keenness was clearly dead—killed by the many changes of the last fifty years. And although some of the Goshawks were taken out to show me sport, I do not remember that I ever witnessed a

kill. The majority of the birds were never properly trained, and after my departure were doubtless given up again. Yet the district is most suitable for the sport of falconry, and during the winters of 1917-1918 and 1918-1919 I enjoyed most excellent sport with my own trained birds, usually preferring to see a small bag killed with the Falcons to a larger one obtained with my gun. It may be of interest to append the list of game killed by my own birds.

SEASON 1917-1918.

Mallard	8	Pond-Heron	20
Gadwall	2	Rollers	1
Teal	2	Grey Partridge.....	16
Houbara	2	Norfolk Plover.....	3
Red-wattled Lapwing ..	51	Purple Coot.....	1
Green Plover.....	1		

SEASON 1918-1919.

Houbara	4	Grey Partridge.....	6
Mallard	10	Pond-Heron	4
Gadwall	5	Red-wattled Lapwing ..	21
Spot-bill	2	Rollers'	6
Pochard.....	1	Purple Coot	1
Teal	19	Norfolk Plover.....	1
Shoveler	4	Great Stone-Plover	3
Smew.....	1		

During my stay at Jhang a collection of between 1000 and 1200 bird-skins was made, mostly with my own hands, and on them this account is based. These skins are now with the remainder of my collections in the museum at Grove House, Lowestoft. The list contains the names of 268 species, in addition to 8 species whose claim to inclusion cannot be fully admitted as yet: these are distinguished by square brackets. Further observation would certainly extend the number of species on the list.

The nomenclature adopted is largely based on Dr. Hartert's invaluable work, 'Die Vögel der palaäarktischen Fauna': to it and the author I desire to acknowledge my indebtedness.

Finally, I wish to record the fact that this paper is due to the help and encouragement which I have received, not only

in its preparation but for years past in all branches of ornithology, from Dr. Claud B. Ticehurst. To him I tender my warmest acknowledgments.

***Corvus corax laurencei* Hume.**

(3 skins.)

The Raven is a common and resident species, generally distributed throughout the district, found alike in the canal areas and on the most desolate of the semi-desert plains. It is always to be met with in pairs, and these probably do not move about much, as year after year nests are to be found in the same locality, often in the same tree.

Seventeen nests containing eggs were examined. Three of these were found in January (on the 18th, 19th, and 29th). Twelve were found in February. Two were found in March on the 15th and 17th. Excluding two nests with incomplete clutches, I found one clutch of 6 eggs, six clutches of 5 eggs, five clutches of 4 eggs, and three clutches of 3 eggs. The only nest examined with young contained two nestlings.

Eleven nests were in Kikur-trees, three in Shisham, and one in tamarisk. The other nests I did not see personally. All nests were of the same type—large, rather untidy, stick nests, thickly lined with a miscellaneous conglomeration of sheeps' wool, goats' hair, camels' hair, rags, and cotton. All nests were in cultivation and none were seen out on the barren plains. Some were placed in solitary trees out in the fields, others in gardens or at the sides of roads; some were in trees growing over the huts round small irrigation wells, and in one instance the nest was in a tree within the railway fencing. These Ravens are absolutely indifferent to the presence of man, and indeed affect his neighbourhood.

A series of 64 eggs shows considerable variation, but no type which has not already been included in Hume's full description of the eggs of this species. One clutch of 4 eggs gives abnormally long measurements: viz. $57\cdot5 \times 34$, $55\cdot5 \times 33$, 55×33 , $55 \times 33\cdot5$ mm. Excluding this clutch 60 eggs yield the following measurements:—Length $42\cdot5$ – $52\cdot5$ mm., breadth $30\cdot5$ – $34\cdot5$ mm.; average $47\cdot5 \times 33\cdot1$ mm.

It is remarkable that in both years there seemed to be an unusual number of Ravens about headquarters in September. As the Raven is reported to be a winter visitor to Upper Sind, these birds were probably migrants.

Corvus splendens zeugmeyeri Laubm. (14 skins.)

An abundant resident, generally distributed wherever there are human habitations. There was a curious strain of albinistic birds frequenting the Civil lines; two of these were shot and preserved, and their description will be found in *Journal Bombay N. H. Soc.* (vol. xxvi. pp. 290 and 843). A similar chocolate-and-cream coloured bird was seen in the same place after their demise, and one or two normal birds with just some white in the primaries were also seen in the same neighbourhood. The chief interest in these birds, to my mind, lay in the fact that they enabled one to realise what a sedentary bird the House-Crow is: with the exception of the usual nightly move to the roosting-place (in Jhang the big trees of the circular road), each individual keeps to a very small area and hardly moves from it. These abnormal birds consorted with their normal brethren and suffered no persecution.

Small parties of this Crow when on the evening flight, have the habit, so often seen in flocks of Rooks at home, of suddenly swirling down from a height in the sky almost to the ground. Vultures sitting gorged on the ground are frequently worried by Crows, who keep on jumping on to their backs in a sort of game of Tom Tiddler's ground. In a somewhat similar fashion I have seen a Tawny Eagle feeding in a tree much worried by Crows, who kept on stooping at him through the branches and striking with their feet on the back of his wings and tail. The tiny fish which are stranded in pools and channels as they dry after the floods of the rains are eaten in great quantities by Crows.

Fresh eggs are to be found during the first half of July. A series of 27 eggs gives the following measurements:—Length 32·5–44, breadth 23–27 mm.; average measurement 36·7 × 25·8 mm.

Dendrocitta vagabunda (Lath.). (1 skin.)

A resident and sparsely distributed throughout the district. I have seen a pair frequenting the verandah of a rest-house in order to feed on the common yellow wasps that built their hives in such places.

Sturnus vulgaris dresseri Buturl. (1 skin.)

A female was shot by me at Massan on 9 February, 1918, from a flock of *S. v. poltaratskyi* and *S. v. porphyronotus*. This appears to be the second record for the Punjab, the first (a male) having been obtained at Khanewal, a little south of Jhang, on 30 December, 1917, by Capt. C. B. Tiechurst.

Sturnus vulgaris nobilior Hume. (2 skins.)

Two males were obtained early in 1918, at Massan on 7 January and at Mochiwala on 4 February. The latter was shot from a flock of *S. v. poltaratskyi*. These appear to be the first records for the Punjab proper.

Sturnus vulgaris porphyronotus Sharpe. (11 skins.)

A common winter visitor, occurring in company with *S. v. poltaratskyi*, and obtained on various dates from 8 November to 9 February. All the specimens were shot either at Mochiwala or Massan.

Sturnus vulgaris poltaratskyi Finsch. (20 skins.)

An abundant winter visitor, arriving towards the end of October and leaving at the end of February. Each year a few birds were seen in March, the latest dates being as follows:—10 March, 1918; 6 March, 1919; 11 March, 1920.

Pastor roseus L. (9 skins.)

Although the Pastor visits the district in great abundance, its numbers and its stay are somewhat variable, and are dependent doubtless on conditions connected with the monsoons and consequently its food-supply in other areas.

It is one of the earliest of the autumn passage migrants, arriving in the second week of July and reaching its highest numbers in August and September. The majority of these

birds pass away by the beginning of October, but some remain throughout the month, and in 1917 and 1919 it was fairly common up till the end of December. In the drought of 1918, on the other hand, I saw only a single bird in November and none at all in December.

From January till the end of March the Pastor is away from the district. Two small parties of stragglers seen in January 1918 and March 1920 merely served to emphasise the absence of the hordes of this species.

About the second week of April the return migration sets in, and lasts until about the middle of May, but the species is not nearly so abundant at this season as on the autumn passage.

***Acridotheres tristis* (L.).** (5 skins.)

Resident, most abundant and generally distributed. Breeds from April to July.

***Acridotheres ginginianus* (Lath.).** (2 skins.)

A resident, fairly common and generally distributed. It appears to move about a good deal, and may be migratory to some extent, as my records for August and September are much more numerous than those of any other month.

***Oriolus oriolus kundoo* Sykes.**

A summer visitor, but mostly confined to the canal areas. The earliest and latest dates on which it was observed were 2 April, 1918, and 1 September, 1919.

***Dicrurus ater ater* (Herm.).** (4 skins.)

A resident, generally but sparsely distributed throughout the district, and distinctly less abundant than in the central and northern Punjab. It is probable that there is a slight immigration of breeding birds during the summer.

***Uroloncha malabarica* (L.).** (2 skins.)

An abundant resident and generally distributed. It is particularly partial to the seeds of the "Pampas grass," where it feeds in company with *S. amandava* and *Passer pyrrhonotus*. Eggs were found in August, September, and December.

Sporæginthus amandava (L.). (7 skins.)

A resident and common, but confined to bush and "Pampas grass" jungle in the neighbourhood of water, as at Chund, Massan, and Nurpur.

Carpodacus erythrina roseata (Hodgs.). (2 skins.)

Two males were secured from a small flock in a Kikur-tree in the Police lines at Jhang on 18 September, 1918.

Gymnorhis flavicollis transfuga Hartert. (6 skins.)

An abundant summer visitor, arriving in the latter half of March and becoming common by the beginning of April. The earliest date on which it was observed was 17 March, 1918, at Shorkot, where the species appears to arrive a few days earlier than about Jhang. It breeds in May, and about the middle of August collects into flocks which associate with Sparrows and Buntings in the fields of ripe millet. Not observed after 10 September, 1919.

Passer hispaniolensis transcaspicus Tschusi. (12 skins.)

A winter visitor in flocks, but somewhat variable in its numbers from year to year. It consorts with *P. d. indicus*, often in the neighbourhood of isolated hamlets, and is partial to the seed-heads of the Sarkana grass. It was observed from December until the end of March (latest dates 28 March, 1918; 26 March, 1919), but my records of this species are rather incomplete.

Passer domesticus indicus Jard. & Selby. (14 skins.)

An abundant resident and generally distributed.

Passer domesticus parkini Whistler. (7 skins.)

On the autumn passage of 1918, on various dates in September and October, I noticed a very marked migration of Sparrows; large flocks were to be seen in the evenings flying fast and straight in a south-easterly direction. A lucky chance at one of these flocks secured a male and female, which at once struck me as larger and slightly different in tint from

the common resident bird. Next year I watched for the re-appearance of the bird, and in September I found that large flocks again appeared feeding in the millet-fields with *Gymnorhis flavicollis* and *Emberiza luteola* or passing in a southerly direction. Several specimens were obtained and found to agree with those of the previous year. By this time I was satisfied that these migrant birds were separable from *P. d. indicus*, and I could find no described race with which they agreed. It was, however, easy to conjecture that the race probably came from somewhere in the Himalaya or north of them.

Chance willed that in April and May 1920 I visited Cashmere, and on arrival in Srinagar I at once noted that the House-Sparrow which was swarming there was a larger and differently coloured bird to the common Indian race. A series of six breeding birds was collected, and on my return to England I satisfied myself that these birds were separable from *P. d. indicus*, and I accordingly described them as *P. d. parkini* (Bull. B. O. C. xli. 1920, p. 13). A careful comparison of specimens, allowing for the difference in summer and winter plumages, has satisfied me that the migrant Sparrow which passed through Jhang in numbers on autumn passage must be attributed to the new race.

Flocks of Sparrows probably on the return migration were seen in March and April 1918 and 1919, but no specimens were obtained.

It may be here noted that a male and female Sparrow obtained by me at Ferozepore on 18 and 23 September, 1911, respectively, which were included in my series of *P. d. indicus*, prove to belong to this new race. Magrath has noted (Ibis, 1909, p. 232) that at Kohat vast flocks of a migratory race of House-Sparrows pass through in April and early in May in company with the Spanish Sparrow and the Pastor. It is probable, therefore, that now attention has been drawn to this new race, it will be found to be a regular passage migrant through the Punjab. At Quetta the House-Sparrow is noted as a summer visitor only, so an examination of specimens from there is desirable.

Passer pyrrhonotus Blyth.

(15 skins.)

The Rufous-backed Sparrow is a resident species, and is common in the southern half of the district from about the neighbourhood of Chund bridge downwards. North of that it appears to be somewhat scarce, as I only saw a single pair in the neighbourhood of Nurpur escape, which is exactly suitable to its requirements. Kikur-trees and "Pampas grass" in the immediate neighbourhood of water are essential for the presence of this very local Sparrow, conditions which are most ideally fulfilled in the neighbourhood of the embankments which are constructed in connection with the big railway bridges over the Punjab rivers. Accordingly the Rivaz bridge at Chund is one of the main haunts of this Sparrow in Jhang District. Naturally it is most abundant in the riverain area, but where the canals or other channels have taken water further afield, as at Kadirpur, Asabha and Wer, it is also to be found in small numbers. During the winter months it may be found in large flocks, which feed in company with *Sporeginthus amandava* and *Emberiza c. par* on the plume-like seed heads of the "Pampas grass."

Nidification commences in July: eggs and young are to be found in August and September. Both sexes share the work of incubation. The nests are of two shapes—a small, fairly regular, domed oval of the usual Sparrow type, with the opening rather towards the top, or a long, rather straggling structure, looking like two or three of the first type joined together and connected by a through tunnel. These latter nests are difficult to examine, as the long and narrow entrance way is spiked and guarded with the sharp thorns of the Kikur twigs on which it is based.

All the nests are made of the same materials—namely, that mixture of grass, roots, and large feathers so dear to the hearts of the Sparrow tribe in general: there is some attempt at a definite lining with finer materials and smaller feathers.

The nests are placed impartially in Kikur-trees and Kikur-bushes, and I have found none in any other species of tree. The tree-nests for the most part are suspended in the finer

twigs at the ends of the lower boughs, some 10 or 12 feet from the ground, and in consequence hard to reach. The bush-nests are placed some 4 to 8 feet from the ground, often in very small bushes, but are protected by the fact that the grazing of goats and camels on the softer twigs have made the bushes very dense and thorny. Isolated nests are occasionally found; but, as a rule, the species breeds in loosely connected colonies at some lush and shady spot, where the necessary Kikurs are growing, often with other trees, over or close to water, whether in the form of ponds, patches of marsh, or channels.

Of the number of nests that I examined the majority were empty or contained hatching eggs or young. Spirit specimens of young were preserved. Six eggs successfully blown measure: 18×13.5 , 18×13.5 , 17.5×13.5 , 17.5×13 mm. (c/4); and 18×13.5 , 18×14 mm. (c/2). Four appears to be the normal clutch, but in one nest I found two eggs about to hatch.

***Emberiza calandra calandra* L.**

(2 skins.)

I have already recorded (Journ. Bombay N. H. Soc. xxv. p. 742) the obtaining of the first authenticated specimen in India of the Corn-Bunting from a flock at Massan on 20 November, 1917. Three birds were found by Ticehurst in the same neighbourhood on 22 December. This was after the unusually heavy monsoon of that autumn, and I did not meet with the species again.

Ticehurst failed to meet with it in Sind, and there are no records for India, with the exception of Murray's original record, which has since been discredited. The species is not likely, therefore, to be a regular visitor, even to the north-west of India.

***Emberiza leucocephala* S. G. Gmel.**

(1 skin.)

A male was shot at Kariwala on 15 February, 1918. It was in a Kikur-tree with some other Buntings not definitely identified.

Emberiza icterica Eversm. (9 skins.)

A common autumn passage migrant, appearing in flocks which feed in the fields of ripe millet. Observed between 22 July and 14 September, the majority being met with from the second week of August until the end of the first week in September.

[**Emberiza stewarti** Blyth.

A Bunting seen at Mochiwala on 9 January, 1918, but not obtained, was probably of this species.]

Emberiza striolata striolata (Licht.) (1 skin.)

A male was obtained by Ticehurst in the Nurpur escape on 20 December, 1918. A fine adult was seen by me at Sadaq Nihang on 19 September, 1919. I also wounded and lost in the river-bed at Chiniot on 22 February, 1919, a Bunting which appeared to be of this species.

Emberiza schœniclus pallidior Hartert. (11 skins.)

A common winter visitor to the district, frequenting suitable reed-beds and patches of Pampas grass throughout the riverain area. It arrives about November (earliest date 16 November, 1918) and leaves about the middle of February. This race differs from the typical *E. s. schœniclus*, in addition to the points given by Hartert, in the paler appearance of the under parts, due to less heavily streaked flanks.

Emberiza cia par Hartert. (14 skins.)

This race of the Meadow-Bunting, and not *E. c. stracheyi* as the records of Punjab ornithology erroneously lead us to expect, is a common and generally distributed winter visitor to the district. It arrives early in November and continues common until the end of February. A few individuals are to be met with in March and April. It is very partial to cotton-fields and "Pampas grass" jungle.

The female in winter plumage has the blue-grey of the throat and breast very pale and dull, and much sullied with greyish-ashy fringes and brown tips; it may be distinguished

from the female of *E. c. stracheyi* by size, general paleness of plumage, and the more uniform appearance of the head, in which the stripes are not so clearly defined as in the Himalayan race. The edges of the coverts and quills of the wings are creamy buff, markedly different from the warm rufous-buff of the same parts in *stracheyi*.

A series of 7 males and 14 females from the Punjab yield the following measurements :—

	Bill from skull.	Wing.	Tail.	Tarsus.
Males.	12·5-14 mm.	82·5-87·5	75·5-80	19-21·5
Females.	12·5-14 „	78-83	66·5-79	19-21·5

It is interesting to note that all my specimens of Meadow-Bunting collected in the plains of the Punjab in winter belong to this race ; while all examples collected at Simla in June, August, October, and November are clearly attributable to *E. c. stracheyi*, which is, in my opinion, a resident species except for altitudinal movement, and never visits the plains. Statements to the contrary appear due to confusion between the two races.

***Calandrella raytal adamsi* (Hume). (6 skins.)**

An abundant and resident species, but confined to the riverain area, where it breeds about the stretches of dry sand and tamarisk scrub. In winter the Sand-Lark gathers into flocks, which often join forces with *C. b. longipennis*. The males are in song as early as January and February.

***Calandrella brachydactyla longipennis* (Eversm.). (12 skins.)**

The Short-toed Lark is an abundant winter visitor to the district, occurring in large flocks in the riverain and semi-desert areas, and to a certain extent also visiting cultivation. In both years it was numerous as early as September, and in 1919 the first flock was met with as early as 14 August. It remains common until the end of March, and a few birds stay over into April.

During the winter of 1919-1920 its numbers were much smaller than usual.

Ammomanes deserti phœnicuroides (Blyth). (5 skins).

A resident species, locally distributed in small numbers throughout the district. It is most abundant about the base of the small rocky hills which rise abruptly from the plain between Chiniot and Lalian. Elsewhere it is chiefly found on the curious patches of hard clayey soil, divided into miniature ravines by the action of rain-water, which occur throughout the district.

Several nests were found, mostly old, all of the same character: namely, a substantial cup of twigs, grasses, etc., with a lining of finer materials, placed in a hollow on the side of one of the minute ravines mentioned above and surrounded by a banking of small pieces of hard clay—broken flakes from the sunburnt ground. One nest was in a hollow amongst the bricks of the wall of a ruined hut, 2 feet from the ground; another was on a ledge of a rocky hillside some 5 feet up.

A nest containing one egg and two newly-hatched young was found on 28 April, 1918, and these young birds flew out when I looked at it again on 18 May. C/3 slightly incubated eggs were taken on 8 June from a nest which I found partly built on 2 May: this nest was apparently deserted in the meantime owing to damage done by rain, and afterwards readopted and completed.

This Lark is not at all shy, and when in the neighbourhood of its nest allows a close approach, while it runs freely and wanders about in an erratic manner which gives no clue to the actual site. The note is a curious plaintive, dreamily uttered "peef-peef-peef"; the song uttered during a hesitating mounting flight with deeply flapping wings is a broken collection of disconnected notes: "peef-poop-peef-peef-poop" is a rough attempt to reduce it to syllables.

An unfledged bird was obtained, and it shows that the juvenile plumage is exactly similar to that of the adult, except that the feathers on the upper surface are edged with a more creamy yellowish-buff.

***Ammomanes phœnicura phœnicura* (Frankl.).** (4 skins.)

Four adult males, all deep in complete moult, were shot on 27 July, 1919, from a small flock on waste ground near the canal at Sheikhan. They were not at all shy, flying with a curious uncertain twisting flight when disturbed and soon settling again. So far as I can ascertain, this is the only record for the Punjab above Hissar, where the species occurs in small numbers.

***Galerida cristata magna* Hume.** (1 skin.)

I obtained one at Shah Jiwani on 15 February, 1918; it is probably not uncommon in some years as a winter visitor.

***Galerida cristata chendoola* (Frankl.).** (7 skins.)

An abundant resident and generally distributed. It commences to sing about February, and the song is uttered on the ground, from a bush, and whilst soaring in the air. I took six nests in 1919 between 27 March and 15 May. Sixteen eggs yield the following measurements:—Length 20·5–23 mm., breadth 15·5–17·5 mm.; average 21·8 × 16 mm.

***Alauda arvensis dulcivox* Brooks.** (8 skins.)

A common winter visitor from early in December until about the end of February.

***Alauda gulgula gulgula* Frankl.** (5 skins.)

The Indian Sky-Lark undoubtedly breeds in some numbers in the fields of the riverain area about April and May, and it stays in their neighbourhood until October and possibly November. It is apparently a summer visitor only, and outside the riverain it is somewhat scarce.

***Mirafra cantillans* Jerd.** (1 skin.)

On 23 July, 1919, I first met with this species in the district at Shah Jiwana, where a few were frequenting a cultivated area in which patches of cotton and a kind of runner bean alternated with patches of waste ground. These birds were obviously breeding and the males were in song,

singing on the ground. Next day one was seen at Shadi Sheikhan, and another was disturbed from a cotton-field at Mochiwala on 15 August. It is probably only a summer visitor to the district.

***Pyrrhulauda frontalis affinis* Blyth.** (1 skin.)

A female was obtained by Ticehurst near Pabbarwala on 23 December, 1917.

***Pyrrhulauda grisea* (Scop.)** (5 skins.)

This Finch-Lark is found in numbers throughout the riverain and the neighbouring areas on both sides of the River Chenab from March until September, and breeds there. I found a nest with one egg in a cotton-field on 28 July. Probably the majority of these birds are summer visitors as, with the exception of an occasional flock noticed about Chund bridge, I have not met with it in winter.

The male is in song from March until August: the song is uttered both on the ground and in the air, in the latter case while the bird is rising and falling in a series of deep stoops, keeping round about over the same patch of ground; reaching its highest pitch it closes its wings and falls steeply, to recover and mount again while still some height above the ground. Near the end of its fall, if the observer is close at hand, a whirr can be heard, due to the pressure of the air in the wing-feathers. The song is a monotonous but sweet trill, "trreeeee," without variation.

***Anthus campestris* (L.)** (9 skins.)

The Tawny Pipit first arrives in the district during the last week in August, and although I am of opinion that many of the birds seen in that month and in September are merely passage migrants and move on farther south by the beginning of October, the species remains in fair numbers throughout the winter until the end of March, and a few are to be seen during the first fortnight of April. There was some sign of a return passage commencing about the end of February.

I have measured a series of 15 males and 9 females, and have compared the results with the measurements of this species, as given in the 'Practical Hand-book' and Hartert's 'Palearctic Fauna.' As a result, I would lay down the measurements of the Tawny Pipit as follows:—

	Bill from skull.	Wing.	Tail.	Tarsus.
♂ ..	15-18.5 mm.	(85.5) 87-98	(64.5) 67-76	25-29
♀ ..	16-17.5 ,,	82-85.5	(60) 64.5-69	23.5-25

It may here be remarked that I do not believe in the validity of the supposed smaller race, *Anthus c. minor* (R. Blas.), from N.W. India.

***Anthus sordidus decaptus* Meinertzhagen. (3 skins.)**

This Pipit would appear to be only a straggler on the spring and autumn passage. It was observed as follows:—

1918. 12 March: ♂, Mochiwala (No. 2152); 11 October: ♀, Jhang (No. 2334).

1919. 2 March: one seen at Jhang; 10 August: ♂, Bhowana (No. 2746).

1920. 15 March: one seen at Jhang.

All the above birds were either in or near growing crops: one was seen to perch on bushes.

I have compared the three specimens obtained with the type of *A. s. captus* at Tring, as well as with a series of that race and of *A. s. jerdoni*. The type of the former race came from Palestine, and while it is easy to distinguish a series of Palestine birds from the Himalayan race *A. s. jerdoni*, birds from the Persian and Baluchistan areas are intermediate in coloration, although nearest to the Palestine birds. These three specimens are of this intermediate form to which Meinertzhagen has given the name *decaptus* (Bull. B. O. C. xli. 1920, p. 23).

My birds measure respectively:—

	Bill from skull.	Wing.	Tail.	Tarsus.
♂♂....	20.5, 21 mm.	97, 104.5	83, 90.5	27.5, 29.5
♀.....	19 ,,	97.5	89.5	29

Anthus trivialis trivialis (L.). (5 skins.)

The Tree-Pipit passes through Jhang in some numbers as a passage migrant in spring and autumn.

On the spring migration they appear in March (first dates: 20 March, 1918; 30 March, 1919; 9 March, 1920) and remain on until April, none being seen later than the middle of the month.

On the autumn migration they appear early in September and remain until about the second week in October.

In the somewhat abnormal winter of 1917 a few Tree-Pipits were observed about Massan on 19–21 December, but with the exception of one or two doubtful records, I have no other evidence that the species normally remains in the district during the winter.

Anthus roseatus Blyth. (9 skins.)

Hodgson's Water-Pipit is a common winter visitor to the district, being found in the neighbourhood of jheels wherever Sarpat grass, bushes, or reed-beds supply cover about the edge of the water. I failed to make accurate observations regarding its arrival and departure, but the earliest date on which the species was identified was 7 December, and a bird well on in the spring moult was obtained on 26 March. Nurpur escape, the jheels about Massan, and Chund bridge are favourite localities for the species. This Pipit collects to roost in reed-beds.

Anthus spinoletta blakistoni Swinh. (8 skins.)

The Water-Pipit is found in Jhang District in abundance as a winter visitor during the months of December and January and the first half of February. These birds arrive as early as the middle of November, and they appear to have left by the beginning of March.

The Water-Pipit is by no means restricted to jheels in its choice of terrain; it is found in considerable numbers about cultivation, such as roots, mustard, and growing wheat. They are very restless and at times hard to approach closely, so that the securing of desired stages of plumage is a matter of difficulty.

***Anthus spinoletta japonicus* Temm. & Schleg.**

A male in first winter plumage was shot on 7 December, 1919, at Massan, where it was found in a small jheel much frequented by *Anthus rosaceus*. This bird is probably a not infrequent winter visitor overlooked amongst the numbers of other Pipits, as it will be remembered that Brooks obtained two in the neighbouring district of Multan (S. F. viii. p. 486).

***Anthus rufulus rufulus* Vieill.**

My observations on the Common Indian Pipit are exceedingly unsatisfactory, owing to the difficulty of separating this bird in the field from *A. campestris*; for some time also I found considerable difficulty in separating the two birds in the cabinet, as the only fully satisfactory means of discrimination is one of measurement. The 'Fauna of B. India' supplies very unsatisfactory material as regards measurements, and while Hartert's 'Palearctic Fauna' and the 'Practical Hand-book' give measurements for *A. campestris*, I could not find similar data for *A. rufulus*. It was therefore necessary to work out the differences for myself in England, and the data thus obtained enabled me to separate my series of both species correctly. I then found that several skins tentatively identified in India as *A. rufulus* were really *A. campestris*, with the result that the majority of my field notes regarding the appearance and dates of the two species became valueless: hence the status of *Anthus rufulus* in Jhang District remains uncertain. It is probably a summer visitor only, as is the case with so many Indian forms in the extreme north-west of the Indian Peninsula. At any rate, the bird breeds in considerable numbers all along the riverain area of the Chenab, and presumably also the Jhelum, being paired as early as March and continuing on the breeding-ground as late at least as the end of July.

The relative lengths of the tertiaries in relation to the primaries is no distinguishing feature as between *A. rufulus* and *A. campestris*. It is variable in both species.

Reliably sexed birds may, however, always be separated on measurements, as may be seen from a comparison of the

table below with the table given for *A. campestris*. No specimens of *A. rufulus* were preserved from Jhang, but 9 males and 3 females from other localities which I have measured give the following results :—

	Bill from skull.	Wing.	Tail.	Tarsus.
♂.....	15.5-16.5 mm.	81-85	58-63.5	23-27
♀.....	15.5 „	76.5-79.5	54.5-58	25.5-26

Motacilla flava beema Sykes. (6 skins.)

Sykes's Yellow Wagtail was by far the most abundant of the Wagtails in both the spring (March) and autumn migrations (September). The total number of individuals passing along the course of the Chenab River at these seasons must be incredibly large.

Note.—The difficulty of identifying Wagtails in the field in their various stages, and the vast numbers of these birds that winter in, or migrate through the district, have made it quite impossible for me to keep accurate notes as to the occurrence of the different species; for one bird shot or otherwise identified, hundreds were seen flying overhead or in the distance. Thousands might be feeding in the riverain pastures, while none were to be seen a mile or two away where I was out collecting. The most detailed observation, such as was not possible to me, would be required before any accurate attempt could be made to give more detailed notes of the different races than I have attempted.

Motacilla flava borealis Sund. (4 skins.)

This race of the Yellow Wagtail occurs on both spring (end of March) and autumn passages (September), but it is probably less abundant at the latter time. Two were seen on 28 January, 1918, with a flock of *M. alba*. Three specimens were preserved, in addition to a fourth doubtfully attributed to this form.

Motacilla flava melanogrisea (Homeyer). (5 skins.)

The Black-headed Wagtail passes through the district in some numbers on both the spring passage (March) and the autumn passage (end of August to beginning of October).

A few immature birds, apparently of this race, were seen in December every year.

Motacilla citreola citreola Pall. (11 skins.)

The Yellow-headed Wagtail is to be found about the district jheels as a winter visitor in varying numbers from November to March. Towards the end of the latter month its numbers are greatly swollen by passage migrants, but these soon pass on out of the district, and I have no record later than 6 April, 1919. The return passage takes place in the second half of August, but their numbers then are apparently smaller than in the spring. Two Wagtails seen at Nurpur jheel on 27 July, 1919, were almost certainly of this species.

Motacilla citreola calcarata (Hodgs.). (2 skins.)

Two specimens only of Hodgson's Yellow-headed Wagtail were procured: namely, a male at Massan on 29 March, 1919, and a female in the same neighbourhood on 7 December of the same year. Others were doubtless overlooked amongst the numbers of the typical race.

Motacilla alba alba L. (5 skins.)

Motacilla alba personata Gould. (9 skins.)

These two races of White Wagtail may be treated of together, as they are to be met with almost invariably in company, and appear to show no difference in habits, choice of locality, and time of arrival and departure. *M. a. personata* is, however, most markedly the less abundant. They commence to arrive about September (earliest date for *M. alba alba*, 17 September, 1919, and 18 September, 1918; for *M. a. personata*, 31 August, 1919, and 25 September, 1918), but are most distinctly in a majority, while the great autumn rush of the other species of Wagtail is at its height and does not reach its full numbers until October and November; they then remain generally distributed, and are the commonest Wagtails in the district until about the end of March. A few are to be seen during April, and I noted a solitary

example of *M. a. alba* as late as 5 May, 1919. Nine examples of *M. a. personata* and five examples of *M. a. alba* were preserved. One of these latter (No. 2585, ♀, 1. iv. 1919) might possibly be identified as an example of *M. a. dukhunensis*, which race may be expected to occur in the district. But I am of the opinion that here as elsewhere in the Punjab practically all the White Wagtails belong to the typical race.

Cinnyris asiatica brevirostris (Blanf.) (5 skins.)

The Purple Sunbird is a most abundant summer visitor, arriving at the beginning of March and reaching its full numbers by the middle of the month. Pairing and nidification commence immediately, and eggs may be found in April and May. It remains until the end of September, and the latest date on which I have seen it was 9 October, 1918.

In the five males collected the length of bill from skull varies between 18–19 mm. and the length of bill from the feathers of the forehead between 15–16·5 mm. This is, perhaps, a trifle longer than in birds from Sind, but I prefer to attribute these migratory birds to *A. a. brevirostris* rather than to *A. a. asiatica*, which is apparently a resident bird in the area where it is found.

Zosterops palpebrosa palpebrosa Temm. (1 skin.)

The White-eye appears in flocks as a winter visitor, and remains common from November until late in March. In 1918 a party was observed as early as 17 October. It is possible that a few pairs remain to breed in the district, as I have found nests in the district of Jhelum, and the species also breeds freely at Lahore.

Certhia himalayana taniura Severtz. (9 skins.)

The Tree-Creeper is a common winter visitor to the district from November (first dates 28 November, 1917, and 16 November, 1918) until well into March. It was last seen on 13 March, in both 1919 and 1920. These birds are most noticeably greyer above and paler below than specimens collected at Simla, which are of a warmer, more rufous, tint.

***Parus major caschmirensis* Hartert. (15 skins.)**

This race of the Great Tit is a common and generally distributed winter visitor to the district; it was, however, more abundant during the winter of 1918-1919 than during the other two winters of my stay. It arrives early in November (earliest dates 4 November, 1917, and 6 November, 1918), but appears to be more irregular in its date of departure.

In 1918 only three individuals were seen in March, two on the 11th and one on the 13th. In 1919 it remained common throughout that month and was last noted on the 30th. In 1920, however, it was last observed on 15 February. A series of 15 specimens was collected within the district, and they are indistinguishable from a series of birds collected in Srinagar.

***Lanius excubitor lahtora* (Sykes). (1 skin.)**

A common and resident species, generally distributed throughout the district. Breeds in March and April.

***Lanius vittatus* Valenc. (1 skin.)**

The status of the Bay-backed Shrike in Jhang District is hard to define. Throughout the greater part of my stay in the district it was observed in small numbers, an occasional bird here and there throughout the area, but never so commonly as in the central Punjab. It was apparently resident, but no nests were found. Then in 1919, from the middle of July to the middle of September, I found it very common in those canal areas that lie along the Lyallpur border, both adults and immature birds being observed; but I was unable to satisfy myself whether these birds were part of the resident population or merely passage migrants as I suspected, for in the northern Punjab the species is for the most part a summer visitor only.

***Lanius cristatus isabellinus* Hemp. & Ehr. (3 skins.)**

A fairly common winter visitor, but varying somewhat in its numbers. It was first observed on 10 November in both 1917 and 1918. The majority appear to leave by the middle

week in February, but in 1918 single birds were observed on 13, 19, and 21 March.

In 1918 and 1919 a few Red-tailed Shrikes were seen in September on passage, and at the time attributed to this race; but as the only specimen then obtained has since proved to be *L. c. phœnicuroides*, it is possible that all those migrants were of that race and not *L. c. isabellinus*.

Lanius cristatus phœnicuroides (Schalow). (1 skin.)

A female obtained by me on 1 September, 1919, at Jhang appears to be the first record for this race of Red-tailed Shrike in the Punjab. The identification was verified by comparison with specimens at the British Museum. As this bird was one of several Red-tailed Shrikes seen on passage in 1918 and 1919, it is possible that *L. c. phœnicuroides* is a regular autumn migrant through the district.

Lanius schach erythronotus (Vig.). (2 skins.)

Here, as elsewhere in my experience, the appearance of the Rufous-backed Shrike is somewhat erratic. As a winter visitor it is to be met with in small but varying numbers from November to February. On the spring migration I have two records (5 April, 1918, and 6 May, 1919) of what were clearly migrating birds from their sudden appearance in an area which I was working almost daily. In 1919 a few odd birds were observed on the return passage between 1 August and 19 September.

Tephrodornis pondicerianus pallidus C. B. Ticehurst. (1 skin.)

Only observed as follows :—

25 December, 1919: one on a canal-bank and a small party in "Jhant" jungle on the edge of Sang jheel beyond Dab Kalan (and actually a mile or two over the border into Multan District). 2 and 3 February 1919: one about with a party of Minivets at Mochiwala. 9 September, 1919: two or three at Asabba (*vide* Bull. B. O. C. xli. 1920, p. 56).

Pycnonotus leucotis leucotis (Gould). (7 skins.)

This is the common Bulbul of the district, generally distributed but most abundant in the canal areas. Its status is

rather puzzling : some birds certainly are resident, yet from about March to September a large number either leave the district or change their habitat within it, for during the breeding-season the species appears very much less common; for instance, in the Civil lines during the winter months both *P. hæmorrhous* and *P. leucotis* are found, with the latter more numerous, yet during the summer the latter all disappear.

***Pycnonotus hæmorrhous pallidus* Baker. (4 skins.)**

The Red-vented Bulbul is generally distributed throughout the district as a resident in small numbers. It is, however, less common than the last species. On 20 August, 1919, at Chund bridge I saw but failed to secure what was evidently a hybrid bird, with the red vent of this species and the very distinct dirty-white ear-patches of *P. leucotis*. Eggs are laid in May.

***Pericrocotus brevirostris brevirostris* (Vig.). (5 skins.)**

A common winter visitor in flocks from December to the end of February. Parties were seen as early as 4 November, 1917, and 18 November, 1918, and as late as 12 March, 1918, and 20 and 29 March, 1919.

***Pericrocotus peregrinus* (L.). (2 skins.)**

Two small parties of 4 or 5 individuals were seen—one in cultivation near Ahmadpur on 1 January, 1919, the other in a "Budh" of stunted tree-jungle near Winoka on 1 August, 1919. Two specimens were obtained on the first occasion.

***Tchitrea paradisi* (L.). (2 skins.)**

A spring and autumn passage migrant in small numbers; observed on different dates between 7 and 28 April and 7 and 21 September.

***Leucocirca aureola* Vieill.**

The Fantail Flycatcher is distributed in small numbers throughout the district, and is resident. It is remarkably bold in demeanour; one flew down and took a fly off the shoulder of my Sais as he was standing talking to me.

Muscicapa striata neumanni Poche. (1 skin.)

Observed on the autumn migration as follows :—

20 September, 1918 : one shot at Wariam ; 31 August, 1919 : one seen at Jhang city station ; 10 September, 1919 : two on the railway telegraph wire near Wariam. As in the case of *Agrobates g. familiaris*, these birds represented the outer fringe of a rush of migration through Sind about the same period, as observed by Dr. C. B. Ticehurst, who was then stationed at Karachi. There is only one previous record for the Punjab : namely, the male obtained by me on 10 September, 1913, at Sardi in the Salt Range (Ibis, 1916, p. 59).

Siphia parva parva (Bechst.). (6 skins.)

The Red-breasted Flycatcher is an abundant passage migrant through the district in both spring and autumn. The spring passage starts early in March and continues in force until about the middle of April, the latest record being for 26 April, 1919.

In autumn it arrives about the middle of September, the earliest record being on the 9th (1919), but passes on again between the middle of October and the middle of November. A comparatively small number remain in the district throughout the winter. On the spring passage the males are somewhat pugnacious.

Culicicapa zeylonensis (Swains.). (1 skin.)

A winter straggler only. One was procured from a mixed hunting-party of Tits, White-eyes and Willow-Wrens in a large garden at Dab Kalan on 24 December, 1918. One, or possibly two, was frequenting the rest-house garden at Shah Jiwana when I was there on 18 and 19 January, 1920.

Phylloscopus collybita tristis Blyth. (10 skins.)

The Siberian Chiffchaff arrives in the district towards the end of September or beginning of October and remains throughout the winter until March, during which month a marked increase is noted with the arrival of the spring passage migrants. These appear, however, to pass on rapidly,

but a few birds are to be observed throughout April. Its numbers, however, vary a good deal in different years: during the winter of 1917-1918 the species was most common; it was less so during the winter of 1918-1919, while in the winter of 1919-1920 it was distinctly scarce until a number came in with a cold snap early in February.

The loud "Chiffchaff" song is uttered freely by the passage migrants in March, and I have heard it also on one occasion in autumn on 10 October.

Phylloscopus neglectus neglectus Hume. (16 skins.)

During the winter of 1917-1918 I probably overlooked this species, as the only record is of a specimen obtained by Ticehurst at Kadirpur on 27 December.

Next winter, 1918-1919, I found it common in a Kikur grove at Kadirpur from 13 to 17 November when I was on tour at that place. A single female was shot in some bushes beside the railway line at Jhang on 21 March. In 1920 I shot a male, in the same place as the last specimen, on 13 January, and another male in my garden in some undergrowth on 15 January. Then in the course of a tour on the right bank of the Chenab, from Shah Jiwana to Kadirpur via Kot Sultan and Kariwala, I found the species very common between 1 and 28 January. Nearly all were seen in Kikurs on the canal-banks, often several in company. It is worth remarking that during this same tour I found *Phœnicurus erythronotus* unusually common on the same ground, where it had not been met in other winters; so it is possible that this was also an unusual irruption of these Warblers. The call-note is very distinctive; it is a harsh, rather grating single note, "chit," not unlike that of a Whitethroat and very different to the call of most other members of the genus. It is, of course, a winter visitor only.

Phylloscopus nitidus nitidus Blyth. (8 skins.)

A spring and autumn passage migrant in fair numbers. On the spring migration it first arrives in the latter half of March, and may be met with throughout April (latest date

27 April, 1919). On the autumn passage it occurs from the end of August until October (earliest and latest dates 25 August, 1919, and 18 October, 1918).

Phylloscopus humei humei (Brooks). (2 skins.)

A winter visitor in small numbers, occurring certainly in December and January, if not for a longer period. I was unable to make detailed notes of the occurrence of this species, owing to the difficulty of identifying it amongst the numbers of *P. subviridis*. The call-notes of both birds are very similar, but may be differentiated by the fact that *humei* utters the call "twee-ut" in two syllables and more loudly than *subviridis*, which slurs it into a single syllable.

Phylloscopus subviridis (Brooks). (12 skins.)

A very abundant winter visitor, arriving in the second half of September in small numbers and reaching its full numbers about the beginning of November. It remains common till the end of February and leaves in the middle of March. The call-note has been described under the last species. Before leaving in March the birds start their song, which is very shrill and weak, and can only be heard at a near distance; it consists of a succession of single notes followed by a reel, thus: "wet wet wet weet whir-r-r-r-r."

Phylloscopus indicus (Jerd.). (4 skins.)

A spring passage migrant, passing through in small numbers in March and April. The earliest dates on which it was observed were 23 March, 1918; 13 March, 1919; 15 March, 1920; the latest dates were 10 April, 1918; 21 April, 1919. The bird is inclined to skulk in undergrowth, and has much the same demeanour and habits as the Accentors: the note is a sharp "quit."

Lusiniola melanopogon mimica Madar. (5 skins.)

This arrant skulker is found in considerable numbers in December, January, and February in the dense reed-beds of the Nurpur escape and in proportionate numbers in the reedy channels which meander on the plain near Massan.

I have also found a few in a small reed-bordered jheel at Pabbarwala. It is presumably a winter visitor only, but I saw two at Massan as late as 26 March, 1919. The ordinary call-note is a sharp "chuck," similar to the noise made in cocking a gun; the pleasing song is to be heard early in February.

***Acrocephalus stentoreus brunnescens* (Jerd.).** (4 skins.)

Observed on the spring migrations as follows:—

1918: one on 9 May and one on 14 May.

1919: two on 6 May and one on 28 May.

All the birds were found in the thick overgrown hedges of my compound, and four of them were procured. A bird seen at Chund on 19 August, 1919, was almost certainly of this species.

***Acrocephalus dumetorum* Blyth.** (5 skins.)

Blyth's Reed-Warbler passed through Jhang in some numbers on the spring passages of 1918 and 1919. In 1918 it was first noticed on 7 April and continued common until the middle of May, being last seen on the 16th. In 1919 it was first heard on 11 April and continued fairly common until 23 May; a single bird was seen as late as 7 June. These spring migrants sing freely in the hedges. On the autumn passage it was only observed in 1919, when a few birds passed through in August.

***Hypolais rama* (Sykes).** (5 skins.)

***Hypolais caligata* (Licht.).** (8 skins.)

Both these small Tree-Warblers occur in the district in some numbers on the spring and autumn passages. They are very difficult to distinguish in the field, so I was not able to make any accurate notes as regards the dates of either species separately. But although they do not appear to mingle with each other, each species being in patches, so far as I could ascertain, both probably arrive and disappear about the same time. At any rate, on the spring passage Tree-Warblers arrive occasionally as early as the end of March, but more

usually in the early part of May. They return towards the end of July and are abundant in August and September.

Mr. B. H. Bird, I.C.S., kindly sent me a clutch of 4 eggs of *H. rama* with the nest and skin of the parent bird, which he took at Chak Lerwa on the Indus on 14 April, 1918, in the neighbouring district of Mianwali. From his account it appears that the species breeds fairly commonly in that neighbourhood in April.

According to Major Lindsay Smith (Jour. Bombay N. H. Soc. xxiii. p. 366), *H. rama* also breeds commonly in the riverain jungles of the Chenab at Multan, just below Jhang; he does not specify the month, but states that, after breeding, the birds appear in May for a short time in cantonments and then disappear; from which I assume that there, as at Mianwali, the breeding month is April.

From these two records it is highly probable that *H. rama* also breeds in the riverain of Jhang District, but I have no record to that effect. In any case, the situation as regards its breeding and migration appears somewhat puzzling at present. It is possible that the migrant and breeding birds are not the same individuals.

Sylvia hortensis crassirostris Cretzsch. (5 skins.)

The occurrence of the Eastern Orphean Warbler was somewhat irregular in the two and a half years that I was at Jhang, and was doubtless dependent on climatic conditions.

In the first winter (1917-1918), following the abnormally heavy rains, it was comparatively abundant: that is to say, I observed fourteen individuals in the period between 4 November and 28 March, some occurring each month. The rains of 1918 were a practical failure, and no Orphean Warbler was observed that winter, although a single passage bird was seen at Kandiwal on 14 August. The species was next observed on the autumn passage of 1919, when some ten or eleven individuals were observed between 11 August and 10 September. A single bird seen at Mochiwala on 26 and 27 December and another at Kadirpur on 25 January complete the total for the cold weather of 1919-1920.

The above records would indicate that the species is a regular autumn passage migrant as well as an irregular winter visitor.

This bird is most partial to Kikur-trees, and was for the most part met with climbing about in their branches after the manner of Whitethroats; but a few were observed in the thorny tangles of large bushes of the wild Caper.

***Sylvia communis icterops* Ménétr.** (5 skins.)

The Eastern Whitethroat was only observed on the autumn passage of 1919, when six individuals in all were met with. Two were found at Mochiwala on 17 August and another in the same locality next day. Single birds were found at Wariam on 10 and 14 September and another in the Shorkot direction on 18 September. All were found hopping about the boughs of Kikur-trees in the neighbourhood of canals.

***Sylvia curruca affinis* Blyth.** (8 skins.)

The Eastern Lesser Whitethroat arrives early in September (earliest date 4 September) and becomes common about the middle of the month. The majority of these birds seem to pass on farther into the plains, but the species remains fairly common from October until the end of February. A certain number are to be met with in March and April, and fresh birds arrive with the spring passage and are passing through early in May; the latest date on which one was seen was 10 May, 1919.

***Sylvia curruca minula* Hume.** (11 skins.)

This race of Lesser Whitethroat is a common winter visitor to the district and is found in all portions of it, often in the same tree with *S. c. affinis*, although it has a somewhat more marked partiality for the more barren and open stretches of country.

The majority arrive early in September, the species being common about the middle of the month, but I suspect that most of these earlier arrivals pass on farther into the plains. From November to the end of February the bird is common,

but its numbers appear to vary in different years. March sees the departure of the majority, but I have seen a few during the first week of April.

[*Sylvia althæa* Hume.

Although the bird was not obtained, I have little hesitation in attributing to this species a Whitethroat which was seen by me near Muradwala on 13 August, 1919. Unfortunately at the time I was riding in company with a number of local notables, and was therefore unable to use my gun.]

Sylvia nana nana (Hemp. & Ehr.). (13 skins.)

I had previously only met with the Desert-Warbler in the Sirsa subdivision of Hissar District (as recorded in the Journal of Bombay Nat. Hist. Soc. xxiv. 1915, p. 190), so it was a welcome surprise to find it a very common winter visitor to Jhang District. While the majority probably do not arrive until towards the end of October, I have shot a specimen as early as 25 September, 1918. They leave again about March, and the latest dates for 1918 and 1919 were 24 and 26 March respectively.

The Desert-Warbler may be looked for throughout the district, from Chiniot to Shorkot (although I have not actually seen it west of the Jhelum), wherever patches of semi-desert plain occur; here it lives in the small Karil-bushes which dot the ground, creeping in and out of their thorny fastnesses, perching on their topmost twigs, and running about the sand at their bases. Usually shy and retiring, at times it is bold and allows a near approach; as, for instance, when I walked up within a couple of yards of one as it sat on a twig, bowing and eyeing me with interest. It has a curious habit of following other birds, such as Wheatears, from bush to bush, and this would appear to be from sociability rather than pugnacity.

Acrobates galactotes familiaris (Ménétr.). (2 skins.)

Two specimens were obtained on the autumn migration in the south of the district, namely at Haveli Bahadur Shah

on 24 September, 1918, and near Wariam on 10 September, 1919. The species appears in September in small numbers as a regular autumn migrant in Sind, so it is clear that the fringe of the route just reaches this portion of the Punjab.

***Prinia inornata inornata* Sykes. (1 skin.)**

This Wren-Warbler is a common resident, and is generally distributed throughout the district on all types of ground. Breeds in July and August.

***Prinia gracilis lepida* Blyth. (3 skins.)**

A very common and widely-distributed resident, found not only in the grass jungles of the riverain, but also on the saltpetre impregnated plains with small thorn bushes and desert plants about Massan, Shorkot, and similar areas. Of the species of *Prinia*, it is least often found in cultivation. It breeds from March to July.

***Prinia socialis* Sykes. (2 skins.)**

A resident, but the least common of the three species of *Prinia* found in the district; observed here and there in the Chiniot and Jhang tehsils, but not, so far as my notes serve, on the Shorkot side. A few lived about my garden throughout the year.

***Franklinia buchanani* (Blyth). (4 skins.)**

A resident, and common throughout the district wherever suitable patches of waste ground occur. It is, however, certainly less abundant than in the semi-desert plains of south-eastern Punjab. Breeds from April to August.

***Cisticola cisticola cursitans* (Frankl.).**

The Fantail Warbler was found to be common and apparently breeding in the "Pampas grass" and reeds of the Nurpur escape late in July 1919. Otherwise it was only observed at Kadirpur on 13 February, 1918, when one or two were found in the rushy margin of a small half-dry jheel.

Laticilla burnesi (Blyth). (2 skins.)

This Grass-Warbler is fairly common about the thick cover of the Nurpur escape. It was also observed in small numbers about the Massan jheels and in "Pampas grass" in the river-bed of the Chenab at Dab Kalan. A single example was seen at the small canal outlet at Asabha. The majority of the birds were observed in the winter months, but as the Asabha bird was seen on 9 September and a pair were noticed at Nurpur on 25 July, I presume that the species is resident in the district. It has a loud and pleasant song, similar to that of *Savicola caprata*.

Orthotomus sutorius sutorius (Forst.). (4 skins.)

A resident, and generally distributed in small numbers throughout the district wherever small gardens and cultivation produce conditions suitable to its habits. Breeds in April and May.

Pyctorhis sinensis (Gmel.). (1 skin.)

Only observed on the bank of the Chenab at Dab Kalan, south of Shorkot, when one of a pair was shot in a patch of thick "Pampas grass" on 26 December, 1918.

Argya caudata caudata (Dum.). (10 skins.)

Resident, common, and generally distributed, but most partial to those areas where dry, bare plain studded with wild Caper bushes borders on cultivation. Nests may be found from March until April. It is not, however, so abundant as in the wide semi-desert areas of the south-eastern Punjab about Hissar.

Crateropus terricolor sindianus Ticehurst. (10 skins.)

A resident, and generally distributed but less abundant than the last species. Nests were found in May.

Turdus viscivorus subsp. ?

A single Missel-Thrush was seen and heard on the canal-bank near Kot Sultan on 22 January, 1920.

***Turdus ruficollis atrogularis* Temm. (4 skins.)**

A common winter visitor, but rather variable in numbers and times of appearance. It is particularly partial to canal-banks.

During the winter of 1917-1918 I only saw five individuals on various dates between the 1st and 23rd of February.

In the winter of 1918-1919 the first individual was seen on 9 November, and occasional birds were noticed about until the middle of January, when there was a marked increase which continued until the end of February; occasional birds were noted until the end of March.

In the winter of 1919-1920 it was not seen until 19 December, a few odd birds only putting in their appearance that month. Throughout January and February it was not uncommon, and five individuals were seen on the last day of the latter month in different places, after which it was not observed.

***Myiophoneus temminckii temminckii* Vig. (1 skin.)**

A Whistling Thrush was shot in the rest-house garden at Shadi Sheikhan on 20 January, 1920.

***Monticola solitarius pandoo* (Sykes). (2 skins.)**

A spring passage migrant observed as follows:—1918, two on 5 April; 1919, two on 18 April and one on 24 April. On migration through the Punjab plains it is usually observed about deserted brick-kilns, which are the nearest substitute for rocky ground!

***Ænanthe deserti albifrons* (Brandt). (12 skins.)**

The Desert-Wheatear is a common and generally distributed winter visitor, being particularly abundant on the wide, barren plains. It is the latest of the genus to arrive, only an occasional individual appearing before October. It leaves early in March and all are gone by the end of the month. The low, sweet song is occasionally heard during the winter months.

***Ænanthe leucomela leucomela* (Pall.). (1 skin.)**

On 9 April, 1918, I secured the first specimen of the

Siberian Wheatear, recorded for the Punjab, on the rough ground which lies to the north-east of Hirs Tomb, just outside Jhang. It was a male in winter plumage with no sign of moult. There was a little fat on the body and the testes were very slightly enlarged. No others were seen.

Ænanthe picata (Blyth). (13 skins.)

Ænanthe capistrata (Gould). (27 skins.)

At present I prefer to keep these two Wheatears separate, as I am by no means satisfied that they are merely two forms of one dimorphic species. The evidence has been discussed elsewhere.

Jhang falls within the area where both species or forms occur together with the same status. As I have for some time past been collecting evidence as regards these two birds, I took the trouble to keep a careful record of all the birds seen. The result is given in the following tables:—

Winter 1917-1918.

	July	Aug.	Sept.	Oct.*	Nov.	Dec.	Jan.	Feb.	Mar.	
<i>picata</i> ♂	10	12	8	12	11	9	62
" ♀	1	1
<i>capistrata</i> ♂	1	13	25	28	22	...	89
" ♀	2	8	5	4	2	21
										63
										110

* Joined district on 23rd October.

Winter 1918-1919.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	
<i>picata</i> ♂	1	19	10	5	12	12	5	2	66
" ♀	1	5	1	...	1	8
<i>capistrata</i> ♂	12	3	11	27	4	18	3	78
" ♀	2	...	2	4	...	5	1	14
										74
										92

Winter 1919-1920.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	
<i>picata</i> ♂ ...	...	13	10	*1		18	14	6	1	63
" ♀ ...	...	...	1	...	On	2	...	2	...	5
<i>capistrata</i> ♂	...	28	14	2	leave	31	19	16	2	112
" ♀	1	2	4	1		8	9	...	1	26
										68
										138

* Observations interrupted by illness.

It is not always easy to separate the females in the field, so the relative numbers of the two forms of female can only be regarded as approximate. The great majority were, however, as is indicated by the figures above, of the pale *Æ. capistrata* type. It will be noticed that there is great disparity amongst the numbers of the sexes, and this I noticed in all the species of Wheatear with the exception of *Æ. deserti albifrons*. During the entire period of my stay 191 males of *Æ. picata* were seen, as against 279 males of *Æ. capistrata* and 72 females of both forms combined. It is remarkable also that although there was great variation in the colour of the crown in the males of *Æ. capistrata*, only two or three males of the intermediate type were seen.

The earliest dates for males of the two forms were as follows :—

Æ. picata. 16 August, 1918 ; 2 August, 1919.

Æ. capistrata. 8 September, 1918 ; 2 August, 1919.

The latest dates on which they were seen were :—

Æ. picata. 12 March, 1918 ; 22 March, 1919 ; 1 March, 1920.

Æ. capistrata. 26 February, 1918 ; 4 March, 1919 ; 1 March, 1920.

Both forms were found generally distributed on waste ground and in cultivation alike.

***Enanthe isabellina* (Cretzsch.).** (6 skins.)

Hume always wrote of this Wheatear as if it was one of the most common of the genus occurring in the Punjab, yet in my experience it is much less abundant than most of the other species. Indeed, it is usually somewhat scarce. If any change has occurred in its status since Hume's day, the explanation doubtless lies in the enormous area which has been transformed by the canal systems from desert plain to fertile cultivation. In Jhang District it is a winter visitor in small numbers, and was met with on different dates between 4 August and 1 March.

Enanthe xanthoprymna chrysopygia (De Fil.). (10 skins.)

A fairly common winter visitor, but more strictly confined than the other Wheatears to the wide plains of semi-desert character. It also affects the small hills about Yakuwala. First observed in 1918 on 1 October, and in 1919 on 19 September.

Last observed on 25 March in 1918, on 22 February in 1919, and on 1 March in 1920.

Enanthe opistholeuca Strickl. (12 skins.)

Strickland's Chat is a fairly common winter visitor, arriving about the middle of August (earliest dates 16 August, 1918, and 15 August, 1919) and remaining well into March. These birds are then replaced by migrants, which pass through in small numbers during the first fortnight of April.

Cercomela fusca (Blyth). (2 skins.)

Only found in the district on the small hills about Yakuwala, where it is fairly common. As it was found there on both of my two visits in February and August 1919, it is doubtless resident.

Saxicola macrorhyncha (Stoliczka). (9 skins.)

So little is known and on record regarding this rare Whinchat, and its future status and even existence is so likely to be affected by the progress of the irrigation systems of India, that I propose to deal with it in some detail. I had previously only met with it in the Sirsa sub-division of the Hissar District, as recorded in the *Journal Bombay N. H. Soc.* vol. xxiv. p. 191.

In Jhang District, Stoliczka's Whinchat is very local, and not abundant even where it occurs. Its favourite haunts are the wide plains of a hard, sandy soil, fertile when ploughed and irrigated, but normally of the consistency and appearance of a "made up" tennis-court; they are bare of grass for the most part, but are studded with the small desert plants of "Uck" and "Karil" (wild Caper), and diversified with small sand-dunes and broken ground. Such plains are common

throughout the district, but only here and there is the Whinchat found. Its stronghold appears to be in the wildest part about Khiwa and Mukhiana, but it was noted also at Mochiwala, Bhowana, Ludhamani, and Winoka. A few pairs also inhabit the somewhat different area of the Nurpur Canal escape, where the running-off of volumes of waste canal-water has produced great reed-beds, surrounded by jungles of "Pampas grass." Curiously enough, the Whinchat was not found on the wide Shorkot plain, which would seem to be eminently suitable to it. One or two individuals were seen actually in cultivation, but always in the vicinity of waste ground.

It has long been a question where this Whinchat bred, though Hume surmised that it was a resident species, breeding on the desert-plains, where it was found in winter. This surmise was correct. I had not the pleasure of finding the nest and eggs, but met with the birds paired in April and July, and obtained young birds in the first or juvenile plumage in August and September. So there can be no doubt that the bird is strictly resident.

In habits Stoliczka's Whinchat resembles the other members of the genus, perching on the tops of bushes or stems, at times fairly tame, at others surprisingly wild. (*Euanthe deserti* is the common bird of the same ground, and with it the Whinchat is on good terms, neither shy nor pugnacious in its presence. I never heard any call-note uttered. In the field it is easily distinguished from other Chats by the longer, slimmer build, the long tail, and the conspicuous long black bill. The white of the throat shows up at a distance. The whitish tail, with its dark centrals and ends, shows clearly in flight and resembles that of a Wheatear; in fact, there is more danger in the field of overlooking the species from its resemblance to some of the female Wheatears than from any resemblance to *S. t. indica*.)

Nine specimens were collected, and there were previously two in my collection from Sirsa. I have also examined the small series in the British Museum. The account of the plumages given in the 'Fauna of British India' by Oates is

not correct; and although my specimens do not supply a full history of the changes undergone by the bird, the following notes may be of interest:—

Juvenile plumage (2 specimens; July and September).

Upper surface earthy brown, streaked and spotted with pale creamy buff; upper tail-coverts pale creamy buff; wings dark brown, all the feathers edged with rufous, the median coverts with triangular whitish tips; tail dark brown, all the feathers edged on both webs and tipped with rufous; the outer pair of feathers have the entire outer web and a small portion of the base of the inner web rufous; sides of the head, lores, and ear-coverts dirty white, mottled with brown; the lower surface dull buffish white, mottled with brown on the throat and breast. This plumage is therefore entirely similar in character and markings to the juvenile plumage of *Saxicola r. rubetra* (L.), which is, however, much redder in tint. It is moulted in September.

The adult male in winter plumage is as described (F. B. I. vol. ii. p. 63), except that the upper tail-coverts are pure white, broadly tipped with rufous; the primary-coverts are pure white, with some black on the inner webs.

First winter males are apparently to be distinguished by the less pure and shining white of the throat, the lesser extent of white on the tail-feathers, and by the primary-coverts, which are blackish brown with white edges.

The adult females and first winter females appear to be indistinguishable. They are similar to males in winter plumage, but the upper tail-coverts are pale rufous, the white of the chin and throat and the warm buff of the breast are less marked, so that the two areas are not in such marked contrast; the white shoulder-patch is reduced in area or wanting; the primary-coverts are similar to the rest of the wing. The tail lacks the white patches on the inner webs.

The adult male in summer plumage is very handsome, resembling somewhat *Oreicola ferrea* in summer: this plumage appears to be assumed partly by moult and partly by abrasion. The whole of the upper surface, except the tail-coverts which are white, is sooty black, the feathers more or less edged,

according to wear, with creamy buff; a narrow white supercilium from the nostril to the end of the ear-coverts; the sides of the head and the sides of the throat in a well-defined line, black; centre of chin and throat, and upper breast pure shining white; remainder of lower surface creamy buff, warmest in tint on the breast and sullied throughout by the blackish bases of the feathers; wings and tail as in winter plumage, but more unicolorous owing to the wearing-off of the fringes, the white shoulder-patch becoming very marked.

The adult female in summer plumage is not represented in series, but from birds seen and not obtained it is probable that there is not much difference in this sex between summer and winter plumage.

In any stage of plumage, even when the white of the tail is wanting, this bird is distinguished from the female of *S. torquata indica* by the length and breadth of the bill, by the colour of the under parts, and by the paler, purer brown of the tail-feathers.

***Saxicola torquata indica* (Blyth).** (8 skins.)

The Stonechat is a passage migrant in fair numbers through the district about March and the first half of April and again in September. In addition, it is to be found generally distributed in small numbers as a winter visitor.

***Saxicola leucura* (Blyth).** (6 skins.)

This species was first procured in the district at Dab Kalan by Dr. C. B. Ticehurst, who secured five specimens on 24 and 25 December, 1918. These birds were obtained in a patch of tamarisk and "Pampas grass" lying between cultivation and a pool of water in one of the channel-beds of the river. On 1 January following I secured the male from a pair in tamarisk scrub at the edge of fields of vetch and wheat just across the river at Ahmedpur.

The species was also met with in small numbers about the reed-beds of the Nurpur escape in January and February. It probably occurs as a resident species all along the river-bed of the Chenab, but I was unable to verify this owing

partly to the difficulty in touring these areas in the hot weather when the river is in flood, and partly to the difficulty of distinguishing *S. leucura* and *S. t. indica* in the field.

***Saxicola caprata rossorum* Hartert.** (6 skins.)

Although more common in the riverain areas, the Pied Bush-Chat is resident and generally distributed throughout the district. Its numbers are apparently reinforced by an immigration about February, and in March the pleasant song and curious courting display are to be heard and seen; the latter consists of the male flying up into the air with the tail spread widely and the wings flapping slowly, held high about the head.

***Phœnicurus ochrurus phœnicuroides* (Moore).** (10 skins.)

An abundant winter visitor and generally distributed. It arrives in September (earliest dates 12 September, 1918, and 13 September, 1919) and remains common until well into April; the latest date on which it was observed was 20 April, 1919.

An albinistic specimen was procured, as recorded in the Journ. Bombay N. H. Soc. xxvi. p. 289.

***Phœnicurus erythronota* Eversm.** (19 skins.)

A male was first obtained on 18 February near the town of Shah Jiwana, and a female was shot at Rivaz bridge over the river Chenab, about 10 miles from Shah Jiwana, on 12 January, 1919. No others were seen in those two winters, but early in 1920 a great number visited the district. The first two were seen on 1 January, but no more were met with until 12 January, after which they were abundant until the end of the month. Two only were seen in February, both on the 13th. From my notes it appears that I personally saw some fifty of these Redstarts in all. All the birds were in the area which lies between Jhang and the Shahpur District boundary on both sides of the Chenab River. They were found for the most part either in the avenues of Kikur-trees which line the canal-banks or in groves of small Kikur-trees, often in

most arid spots. This is a considerable extension of the known range of this species in N.W. India, as I have already recorded at length (*Journ. Bombay N. H. Soc.* xxvii. pp. 403-405).

Thamnobia fulvicata cambayensis (Lath.). (3 skins.)

A resident species, and thinly distributed throughout the district, nowhere absent and nowhere abundant.

Copsychus saularis L.

A male was seen in the rest-house garden at Chiniot on 19 February, 1919.

Luscinia svecica pallidogularis (Sarudny). (2 skins.)

A winter visitor in small numbers, and apparently also a spring and autumn passage migrant; it first appears in September (earliest dates 13 September, 1918, and 10 September, 1919), and may be met with until the end of March (latest dates 24 and 30 March, 1919). It is particularly partial to the neighbourhood of jheels.

Prunella atrogularis (Brandt). (2 skins.)

The Black-throated Accentor was observed regularly each winter as follows:—

1917. 27 December. One shot by Dr. Ticehurst in a patch of "Pampas grass" at Kadirpur.

1918. 11 February. One shot in the bush-clad border slopes of the "Thal" at Mochiwal.

1918. 20 December. Two or three in the "Pampas grass" at Nurpur escape.

1919. 25 December. Two in the "Budh" at Mochiwal.

Hirundo rustica rustica L.

The appearances of the Swallow in the district are somewhat erratic, and it is difficult clearly to understand their status. A number are to be seen about the riverain in August and September (earliest dates 8 August, 1918, and 19 August, 1919), and these are doubtless passage migrants

which have followed the rivers down from Kashmir. Then during November and December occasional birds and large flocks are to be seen mostly in the neighbourhood of jheels. I have no records for January or February, but in March 1918 a few Swallows were seen.

A doubtful record of two birds on 1 April and a single bird seen on 4 May, 1919 complete my observations on the species. In other districts of the Punjab I have found the same difficulty as to the exact status of the Swallow, and the probable explanation is that it is more easily affected than most birds by the vicissitudes of food-supply and climate, and uses its powers of flight to escape them.

***Hirundo daurica*, subsp. ?**

A few Striated Swallows were seen at Jhang on 10 and 12 September, 1918, and on 5 May, 1919 ; unfortunately I failed to secure specimens, so the race remains undetermined.

***Hirundo smithii* Leach.**

For the most part the Wire-tailed Swallow is a summer visitor, and at that season it is to be found throughout the area of the canals, breeding under the canal-bridges and in the porches and verandahs of every canal rest-house. My notes do not clearly show the date of its arrival, but nests with eggs or young may be found throughout July and August, and the species remains common until the end of September. It is seldom seen away from water. An occasional bird may be seen throughout the winter months.

***Riparia chinensis* (J. E. Gray).**

(3 skins.)

This tropical form of Sand-Martin breeds commonly about the Chenab River from November till about April, but I do not feel certain that it is a resident species. Sand-Martins were seen throughout the year, except for the months of June and July, and only a few were observed in May and August, but it is probable that one or more races of *Riparia riparia* appear as migrants in the district. Although no specimens were obtained, birds were seen which looked

different to *Riparia chinensis*, larger and, in the case of one flock, with paler rumps. This is the more probable in that birds found breeding at Jhelum (Ibis, 1916, p. 69) were referred to *Riparia riparia* and described as a new race of that form, *R. r. indica* Ticehurst. I have carefully compared these Jhang birds with those from Jhelum, and there is no doubt of their distinctness. On the other hand, breeding-birds obtained in January and February at Campbellpore and Attock by Mr. A. E. Jones are the same as the Jhelum birds. It is clear that a lot of work remains to be done as regards the Sand-Martins of India.

***Riparia rupestris* (Scopoli).**

A winter straggler only; one was seen at Jhang on 8 March, 1918, one or two about the low hills at Yakkuwala on 23 February, 1919, and one at Jhang on 2 January, 1920.

[***Delichon urbica* (L.).**

Two Martins seen on 13 October, 1918, were almost certainly of this species.]

[To be continued.]

XVII.—*Remarks on the Japanese Petrels of the Genus Oceanodroma.* By NAGAMICHI KURODA, Rigakushi, M.O.S.J., F.M.B.O.U.

VISCOUNT Y. MATSUDAIRA, M.O.S.J., has recently collected a series of Petrels off the coast of Sagami Bay, Hondo, Japan, and has sent them to me for examination. They are preserved in his collection. I examined them very carefully, and came to the conclusion that the series contains two species. They are as follows:—

Oceanodroma melania (Bonaparte).

Oceanodroma markhami owstoni (Mathews & Iredale).